

# FOUR NEW FLEAS COLLECTED BY PROFESSOR F. SPILLMANN IN ECUADOR.

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(With 6 text-figures.)

## 1. *Hoplopsyllus andensis* sp. nov. (text-fig. 62).

♀. Differs from *H. glacialis* Taseh, 1880 and *H. exoticus* J. & R. 1921 in the pronotal comb extending farther down the sides, consisting of 20 spines, which, moreover, are less pointed than in the allied species. The bristles on abdominal segments VII and VIII as in *H. exoticus* (cf. *Ectoparasites*, i, p. 312, text-fig. 314);

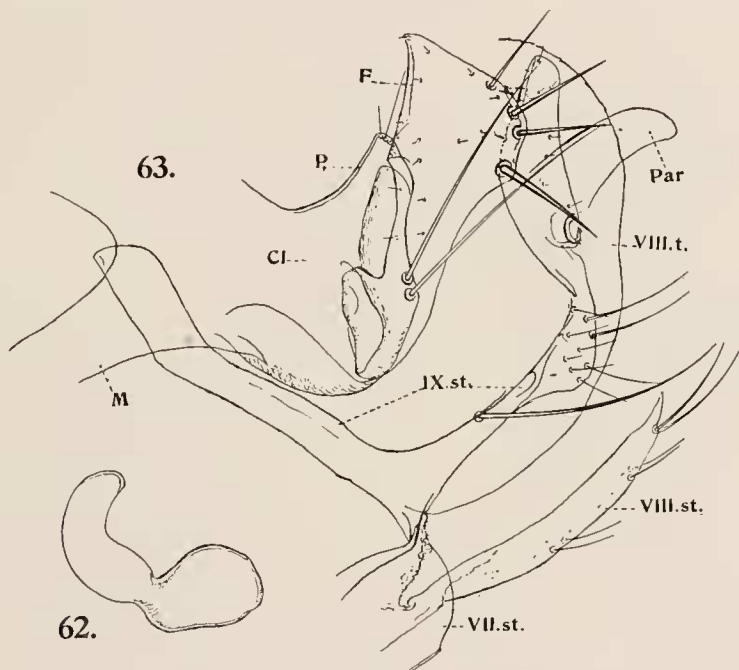


FIG. 62.—*Hoplopsyllus andensis*, spermatheca.  
FIG. 63.—*Ceratophyllus equatoris*, ♂-genitalia.

the ventral excision of VII.st. as deep as in *H. exoticus*, but the specimen not flattened enough for comparing the width of the excision. Stylet as in *H. glacialis* (and its subspecies), i.e. shorter than in *H. exoticus*, with two lateral bristles. The head of the spermatheca (text-fig. 62) smaller than in *H. gl. glacialis* and *H. gl. lynx* Baker 1904, whereas the tail is broader (the organ not preserved in the unique specimen of *H. exoticus*).

Ecuador: Paramo de Guamani, on road to Baiza, Region Oriental, on *Thomasomys* sp., 29.vii.1931, 1 ♀.

This discovery extends the range of the Northern genus *Hoplopsyllus* into South America; *H. exoticus* was obtained at Panama.

2. *Ceratophyllus equatoris* sp. nov. (text-figs. 63, 64).

♂♀. Close to *C. apollinaris* J. & R. 1921, of which only the ♀ is known; the ♀ of the new species differs in the upper lobe of VII.st. being much broader and rounded.

♂. The VIII.t. strongly rounded, bearing 6 or 7 dorso-marginal bristles, of which the 2 or 3 distal ones are long, and in addition 6 long lateral bristles, of which one is ventral. VIII.st. long and narrow, about one-eighth shorter than first hindtarsal segment, convex beneath, nearly straight above, pointed, ventrally with a pair of short bristles each in middle and at apical fourth, and a longer pair before apex. Bay above manubrium of clasper (text-fig. 63) evenly rounded, parabolical, not semicircular; manubrium (M) measured on upperside

from deepest point of bay as long as clasper measured from the same point to the posterior margin above the acetabular bristles. Dorsal margin of clasper (C1) incurved, this bay flatter than a semicircle; process P irregularly triangular, being somewhat convex on the posterior side; upper acetabular bristle on a level with the lowest point of the anterior margin of the exopodite F. Angle of anterior margin of exopodite in middle of margin, the exopodite from this point upwards about twice as wide as in lower half; opposite the angle of the anterior margin, at the beginning of the widened portion, a large spiniform, above this bristle the posterior margin about parallel with the anterior margin, slightly incurved, then strongly rounded and running obliquely upward-forward, forming with the anterior margin an acute apical angle, the tip of which is a little bent frontad; at the curve of the

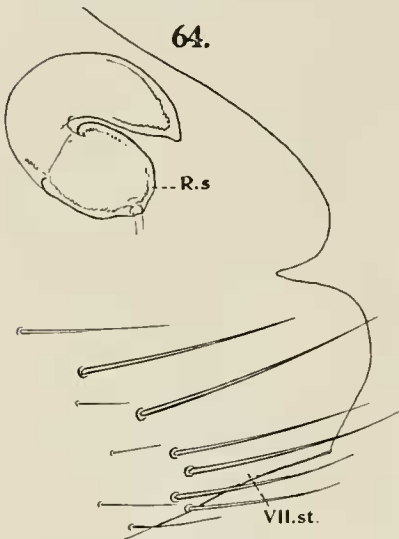


FIG. 64.—*Ceratophyllus equatoris*, VII.st. and spermatheca.

posterior margin 2 strong bristles about half the width of the large one below them, and farther upward a paler bristle, thinner and shorter. Apical portion of vertical arm of IX.st. but little dilated; ventral sclerite narrow to point of division at one-third, then ventrally slightly rounded-dilated, this antemedian portion bearing about 10 bristles, of which the 2 ventral distal ones are long, but pale; the apical lobe of the ventral arm dorsally as long as the rest of the sclerite, convex above, broadest about middle, at apex more rounded ventrally than dorsally.

♀. VII.st. (text-fig. 64) divided by a narrow triangular sinus into two rounded lobes, of which the lower one is much the broader. Head of spermatheca about half the length of the tail, somewhat abrupt at the juncture with the tail.

Length: ♂ 2.7 mm., ♀ 3.3 mm.; hindfemur: ♂ 0.43 mm., ♀ 0.53 mm.

Ecuador: Quebrada of Pichan, west side of Pichincha, on *Sigmodon* sp., 4.ii.1932, 1 ♂, type; Paramo de Guamani, on road to Baiza, Region Oriental, on *Oryzomys* sp., 27.vii.1931, 1 ♀.

3. *Plocopsylla heros* sp. nov. (text-figs. 65, 66).

♂♀. Near *Ploc. achilles* Roths. 1911; genal comb with 4 spines only, the upper spine of *Ploc. achilles* being absent in the new species; the hindcoxa narrower, the stylet longer, and the spermatheca and the ♂-organs different. Distinguished from *Ploc. phobos* Jord. 1931, which also has 4 genal spines, by the genal and pronotal combs as well as the stylet and the pair of antepygidial bristles being much longer, the head of the spermatheca shorter and the ♂-genitalia different.

♂♀. Genal spines three to four times as long as broad. Pronotal comb with

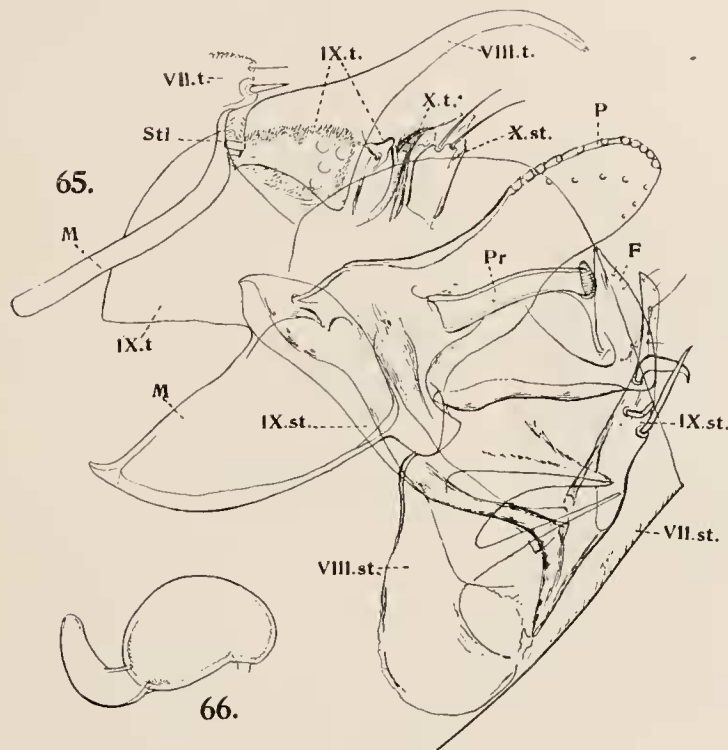


FIG. 65.—*Plocopsylla heros*, ♂-genitalia.  
 „ 66.— „ „ spermatheca.

14 spines, in one ♀ with 16; the dorsal spines one-sixth shorter than their distance from the dorsal anterior corner of pronotum. Bristles on abdominal tergites: in ♂ III 7 or 8, 12 to 15, IV 7 to 10, 14, V 6 to 12, 14, VI 3 to 6, 14, VII 2 to 4, 13 or 14; in ♀ III 13 to 16, 17 or 18, IV 13 to 15, 14 to 16, V 7 to 11, 13 or 14, VI 6 to 11, 11 or 12, VII 9 to 16, 8 to 11. On sternites: in ♂ III 5 or 6, IV 5 or 6, V 0 or 1, 5 or 6, VI 0 to 2, 5; in ♀ III 4 to 8, 6, IV 2 to 10, 6, V 5 to 7, 6, VI 6 to 11, 6. Some of the dorsal bristles of the anterior tergites of ♂ long. One antepygidial bristle in ♂, not longer than the anterior bristles of VII.t., but thicker than the ventral bristle of the posterior row of that segment. On forecoxa more than 30 bristles in addition to the short basal ones.

♂. VIII.t. (text-fig. 65) long, triangular, tapering. VIII.st. on each side

with two lobes, the upper triangular, the lower very slender, almost linear. Inner portion of IX.t. and manubrium of clasper longer than in *Ploc. achilles*, the angle formed by them acute. P of clasper longer and narrower than in *Ploc. achilles*, with a marginal row of 12 or 13 long bristles, of which the fourth or fifth to seventh or eighth are a little shorter than the others; distally at ventral margin 3 or 4 small bristles and on the side 4 to 7 shortish slender ones. Process Pr narrow, at apex dilated and ribbed, recalling by its shape (lateral aspect) a wading boot. Exopodite F ventrally about one-half longer than apically broad, distally tapering upwards, the posterior margin somewhat convex, ventral angle rounded, near this angle a heavy spiniform, which is different in shape from the corresponding spiniform of the other species of *Plocopsylla*, its short narrow basal portion being vertical, whereas the rest of the spiniform is more or less at a right angle to the basal portion, and broad, dorsally and ventrally convex, narrowing to a point, the tip being curved down. Ventral arm of IX.st. with long proximal heel, in middle of ventral margin a broad shallow bay and beyond it a long pointed spiniform which is directed distad and lies along the segment; a short distance beyond this spiniform a short, cylindrical, obtuse, elbowed and twisted spiniform, its apex directed distad, the segment somewhat narrowed from the long spiniform to apex, this portion bearing 2 small hairs, one apical, the other a little more proximal.

♀. Two antepygidial bristles each side, stout, twice as long as hindtarsal segment IV. Stylet longer than in *Ploc. achilles*, as long as hindtarsal segment III. On each side of VIII.t. from 18 to 25 bristles. Body of spermatheca (text-fig. 66) almost bean-shaped, dorsally evenly rounded, widest in or behind middle, not near tail as in *Ploc. achilles*.

Ecuador: Bermeji, on way to Baiza, Region Oriental, off *Blarina thomasi*; Quebrada of Pichan, west side of Pichincha, 2,950 m., 19.iv.1932, on *Blarina thomasi* and *Bl. equatoris*; Pichincha, on *Bl. equatoris*, 28.ix.1931; Chimborazo, iv.1931, on *Sigmodon*; 5 ♂♂, 5 ♀♀.

#### 4. *Sphinctopsylla spillmanni* sp. nov. (text-fig. 67).

♂. Considerably different from the other known species of *Sphinctopsylla* quite apart from the genitalia: segment I of maxillary palpus shorter, proboscis longer, none of the spines of the pronotal comb drawn out into a fine point, apex of hindtibia with but 4 stout bristles instead of a complete comb of 7 or 8, and forecoxa with a smaller number of bristles. These distinctions will probably also hold good in the as yet unknown ♀.

♂. Helmet narrow, widest at spines 6 and 7, here one-fourth wider than these spines are long; 13 spines each side. The anterior long bristle on the genal area nearer to the ventral margin than is the posterior one. Five genal spines; in between the upper two the genal process, which is pale and narrow and reaches beyond the apex of the spines. On each side of occiput a subapical row of 8 bristles and between this row and base of occiput altogether about 18 bristles (inclusive of basal ones), 5 on side being long, the others small and very small. None of the bristles of antennal segment II reach beyond middle of club. Labial palpus extending well beyond maxillary palpus.

Pronotum short, with two rows of 10 bristles each on the two sides together; comb with 18 spines, the dorsal ones as long as the pronotum. Bristles on mesonotum 10, 10, on mesopleura 7, on metanotum 3, 10, 10, on metepimerum 3, 3.

Number of apical spines on abdominal tergites (the two sides together): 4, 6, 4, 4, 4, 2; bristles on I 9, 10, II 8, 15, III 9, 15, IV 6, 15, V 3, 13, VI 5, 12, VII 5, 10; bristles on sternites: II 2, III 6, IV 5, V 4, VI 4, VII 8, the bristles on VII almost spiniform, 4 in a close-set row on each side.

Forecoxa with 22 long bristles and a small number of marginal and basal short ones. On outside of hindfemur a row of 3 bristles in posterior third and at upper margin 12 short ones. In the notches of hindtibia from base around apex

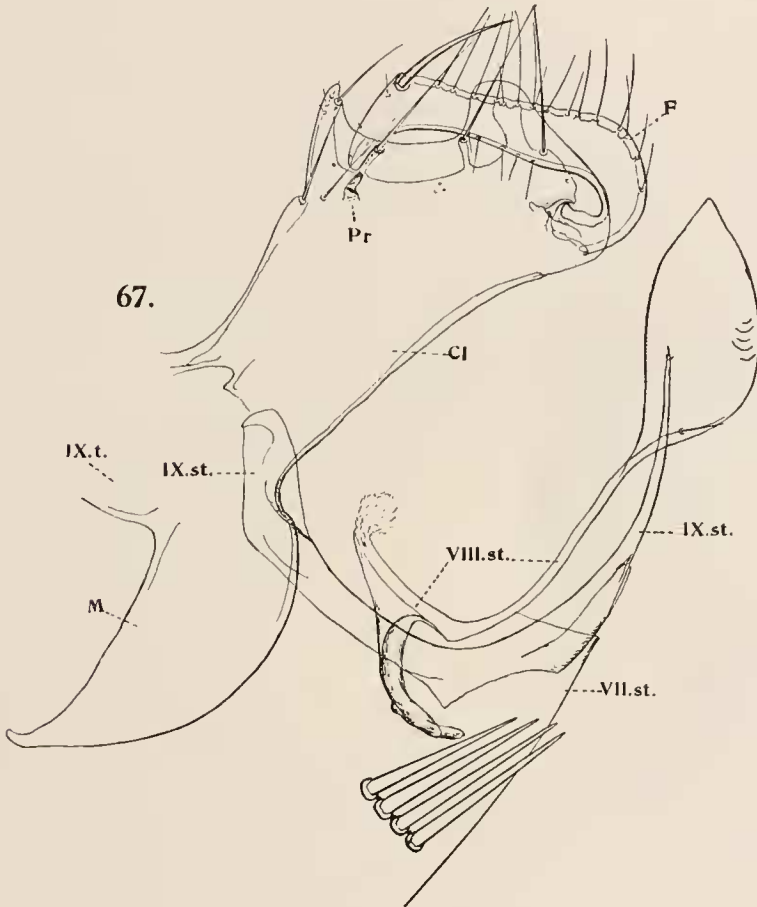


FIG. 67.—*Sphinctopsylla spillmanni*, ♂-genitalia.

to anterior apical corner 13 bristles, which are much less stout than in the allied species, there being in dorsal notches I, II, and III 1 long and 1 short bristle, in IV, V, and VI 2 short and 1 long; on the outer surface 14 lateral bristles on the one tibia and 16 on the other (inclusive of 2 apical bristles).

*Modified Segments.*—VIII.t. large, with the posterior and ventral margins rounded; below stigma 1 bristle. Basal portion of VIII.st. vertical, narrow, sublinear, curved distad, the frontal side being convex, upper third triangular, the lower portion of this triangle drawn out ventrad-distad on the posterior side into a long narrow process which distally widens into a leaf-like ellipse with the

apex pointed, at base of this ellipse a small bristle. Manubrium M of clasper a little over half as broad as dorsally long; angle between manubrium and IX.t. obtuse, rounded. Clasper (C1) longer than broad, broadest in middle, dorsal margin enlarged medianly into a triangular upward projection and at apex into a broad, transparent lobe; ventral margin nearly straight, slightly concave; at and near dorsal margin 5 or 6 bristles, on inner surface a subcylindrical, strongly chitinated projection (Pr) which is longer than broad and serves as a catch for the end of the exopodite, the projection longer than in the allied species. Exopodite F sublinear, about 5 times as long as broad, basally curved almost in a semicircle from base downwards and then upwards-frontad, at apical fourth (about) of hindmargin a long bristle, gently curved downwards, from this point to apex the sclerite narrowed, with the tip rounded off, the exopodite recalling an antelope with an exaggeratedly long neck; from the long bristle to the most ventral point of the hindmargin 14 or 15 thin bristles, about half of them shorter and the others longer than the exopodite is broad; above the long bristle a short lateral one, at the anterior margin 5 thin bristles, and on the inner surface about 10 to 12 very small ones. Vertical arm of IX.st. apically slightly bent posticad, the posterior margin of the vertical arm and the upper margin of the ventral one forming an even semicircle; ventral arm tapering, the point of bifurcation proximal to middle, the apical process quite narrow, distally linear, with a small apical bristle and a minute ventral subapical one.

Length: 2.7 mm. (extended), hindfemur: 0.33 mm.

Ecuador: Pichincha, off *Caenolestes fuliginosus*, 27 IX. 1931, 1 ♂.

I have much pleasure in associating the name of the discoverer with this remarkable species.

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